

REMARKS

Election and Response

Applicant elects, with traverse, **N,N-dimethylethanolammonium formate**, **encompassing pending claims 32-34, 36, 37, 40, 42, 43, and 54-61**, to facilitate prosecution of the application. In making this election, Applicant reserves all rights to any elected or non-elected subject matter from the originally filed patent application. As such, Applicant reserves all rights in all non-elected species, including the right to file divisional and/or continuation applications thereto.

Applicant respectfully traverses the restriction requirement as all of the species listed in claim 54 have one or more shared points of novelty and, thus, collectively refer to a single inventive concept. In particular, Applicant notes that claim 54 depends from claim 32. Per the recitations of claim 32, a key feature of all species listed in claim 54 is that each is an *ionic liquid* that has a *melting point below 25°C and contains less than 1% water*. (Claim 32, last three lines). As further detailed in the pending application, an ionic liquid is a compound comprising a cation and an anion, wherein the compound comprises a protonated nitrogen, has a melting point below 25°C, and contains less than 1% water. (Specification at page 3, first and second full paragraphs). Applicant submits that all species share the ionic liquid feature that is both novel and inventive over the prior art.

The Office asserts that the species listed in claim 54 do not relate to a single general inventive concept and lack the same or corresponding technical feature because claim 32 reads on certain species that lack novelty and/or an inventive step over species listed in Table 19 of U.S. Patent No. 6,361,940 (hereinafter “Van Ness”). Applicant respectfully disagrees. Van Ness discloses compositions and methods for increasing the specificity of the hybridization of nucleic acids, including the use of certain ammonium salts in solution and the use of these salts as “hybotropes,” which is a defined term meaning a chemical in an aqueous or organic environment (i.e., *in solution*) capable of changing the enthalpy of a nucleic acid (see Van Ness at col. 20, lines 14 to 24). Ammonium salts specifically mentioned include primary, secondary and tertiary alkyl-substituted ammonium salts, e.g., salts formed from 2-methoxyethyl amine,

bis(2-methoxyethyl) amine, 3-methoxypropyl amine, diethanolammonium and monoethanolammonium, and one salt formed from a tertiary alkyl-substituted ammonium having at least one hydroxyl substituted alkyl group, namely the acetate salt of triethanolamine. The ammonium salts are not isolated but rather are formed in solution (see Van Ness at col. 30, line 29 *et seq.*).

In contrast to the teachings of the present application, Van Ness is not at all concerned with ionic liquids. More specifically, nowhere does Van Ness teach or suggest that the “hybotropic” ammonium salts can form ionic liquids. Nor are the salts described as having a melting point below 25°C (and thus liquid at ambient temperature), or as containing less than 1% water as required by claim 32. Rather, Van Ness makes clear that the ammonium salts used are not in any isolated or purified form but are instead formed in solution and present at only very weak concentrations. The salt in weak solution attaches to a nucleic acid molecule. (See, e.g., col. 30, lines 21-28). In Example 1 at col. 72, Van Ness does disclose that in the specific cases of tetramethyl ammonium- and tetraethyl ammonium-trichloroacetate (TMA and TEA) that notably are solids at room temperature, the salt solution was dried. However these are the only cases in which the salt was isolated in any form. Otherwise, Van Ness makes no attempt nor provides any suggestion of isolating or purifying ammonium salts at all, and does not describe or suggest purifying ammonium salts to form ionic liquids that are liquid at room temperature. Moreover, Van Ness does not describe or suggest use of ionic liquids as solvents.

In view of the foregoing, Applicant respectfully asserts that all species of ionic liquids as claimed in claims 32 and 54 are both novel and inventive over Van Ness and thus share a single general inventive concept. Accordingly, Applicant respectfully asserts that the ionic liquids of the present invention share a common point of patentability and are properly examined together. Consequently, the species restriction requirement should be withdrawn. However, subject to the foregoing traverse, Applicant elects N,N-dimethylethanolammonium formate, encompassing pending claims 32-34, 36, 37, 40, 42, 43, and 54-61.

Status of the Claims

Claims 32-34, 36-40, 42, 43, and 54-61 are pending. Claims 32-34, 36, 40, 42, 43, 54-56, and 58 have been amended, and claims 35, 41, and 44-53 have been canceled. The claims have been amended to more clearly articulate the subject matter the Applicant regards as the invention. The amendments to the claims are supported by the specification and do not add new matter. In particular, support for the amendments may be found on page 2 lines 3-5 and 13-14, page 6 lines 1-2, page 2 lines 16-30, page 3 line 18, page 3 line 21, page 7 lines 26-29, and page 3, lines 24-27 of the application as filed, as well claims 49 and 52 (which are currently canceled).

Conclusions

Based on the comments above, Applicant respectfully requests that the imposed species restriction be withdrawn. Applicant respectfully submits that the Office's division of species ignores the patentable subject matter common to all pending claims. Applicant also respectfully requests entry of the claim amendments to further prosecution of the application.

The Examiner is requested to contact the undersigned practitioner should any questions or comments arise as to the form, content, or entry of this paper.

Respectfully submitted,

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